



μ-porous Vacuum chucks

Modular version in standard sizes or special design

These chucks have a porous surface area made out of sinterbronze, ceramic or porous aluminium depending on the application and workpiece. METAPOR® opens a whole new perspective for different clamping solutions

Application

Preferred workpieces:

- Thin walled (i.e. paper, foils, plate bars, metal strips)
- Fine (i.e. optical)
- Soft materials (i.e. rubbers)

for work such as:

- High precision measuring
- Precision milling
- Silicon wafer production

Advantages

- Due to the absence of grooves and holes workpieces are not deformed for instance on inserts in the clamping area
- Milling through the workpiece is possible with the use of our Friction booster
- METAPOR® has different quality grades and can also qualify for clean room surroundings (Kl. 10)

Handling

- Modular chucks can be interconnected to enlarge the surface area.
- Part specific special designs available

μ-porous Vacuum chuck

with METAPOR® CE100 White

| Nr. | A | B | C | |
|-------|-----|-----|----|------|
| 91488 | 300 | 200 | 38 | 5,7 |
| 92294 | 400 | 300 | 38 | 11,4 |
| 92296 | 600 | 400 | 38 | 23 |

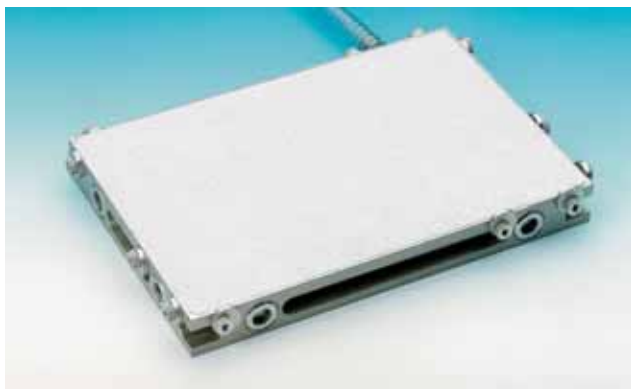
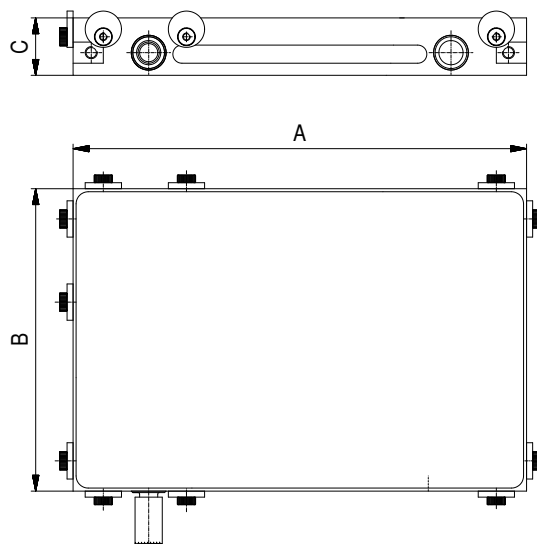


Plate inlay in Metapor CE 100 WHITE fine porous material with low pore diameter and very homogenic total porosity



Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

μ-porous Vacuum chuck

with METAPOR® MC100 White

| Nr. | A | B | C | |
|-------|-----|-----|----|------|
| 91021 | 300 | 200 | 38 | 5,7 |
| 92290 | 400 | 300 | 38 | 11,4 |
| 92291 | 600 | 400 | 38 | 23 |

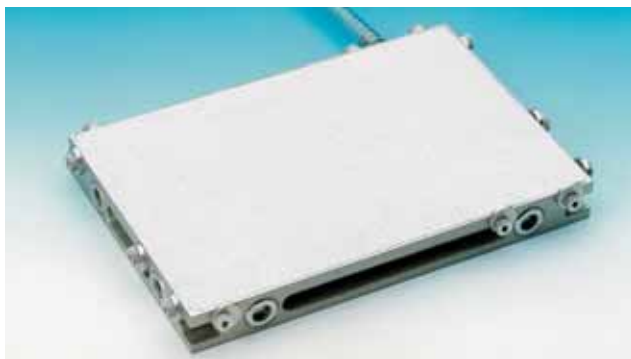
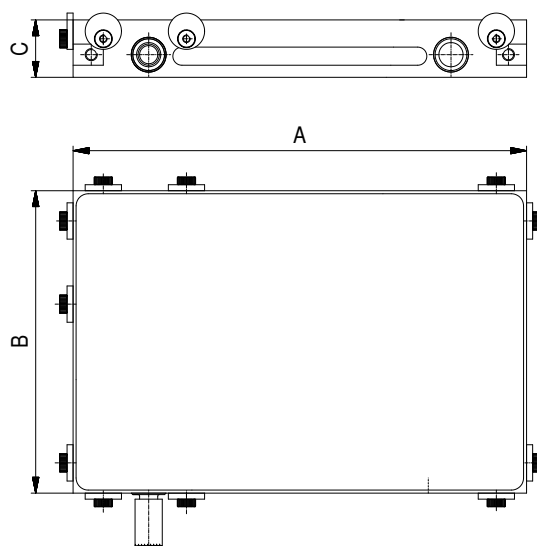


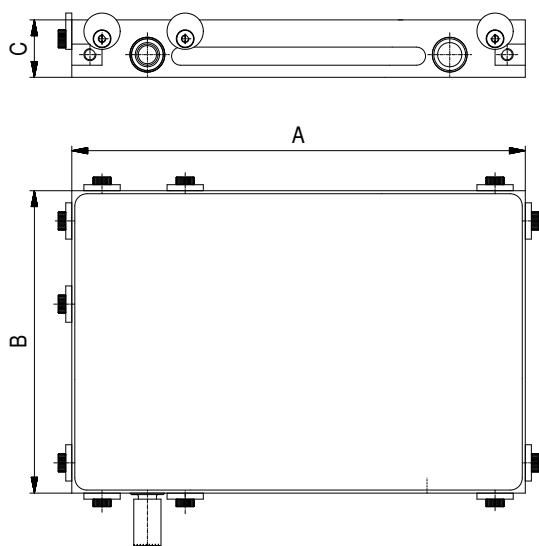
Plate inlay in Metapor MC 100 WHITE fine porous material with low pore diameter and very homogenic total porosity, with larger porosity compared to BF 100 AL



Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

Other Dimensions available on request.
Further information on Metapor see page 96



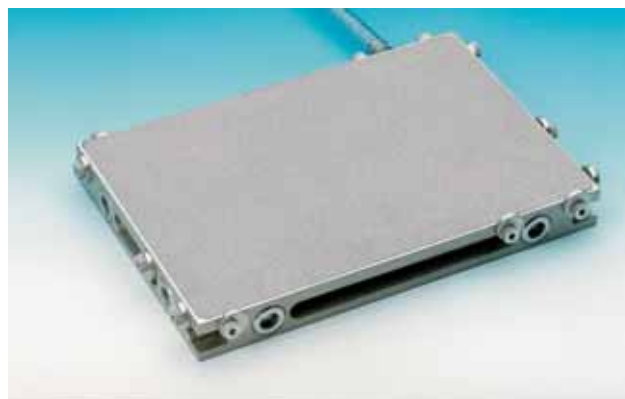
Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

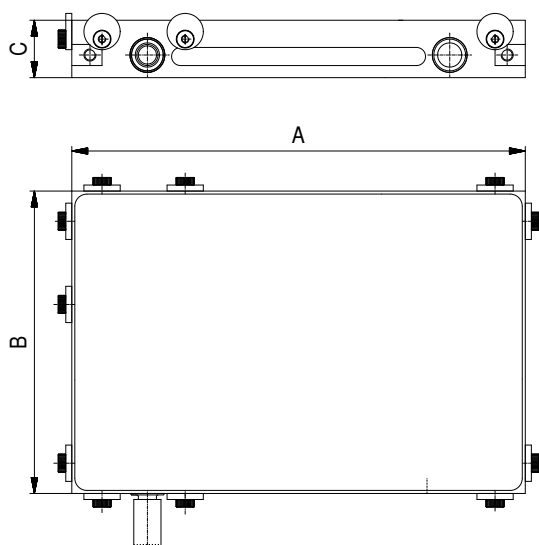
μ-porous Vacuum chuck

with METAPOR® BF100 AI

| Nr. | A | B | C | |
|--------------|-----|-----|----|------|
| 83401 | 300 | 200 | 38 | 5,7 |
| 84380 | 400 | 300 | 38 | 11,4 |
| 84381 | 600 | 400 | 38 | 23 |



i Plate inlay in porous material Metapor BF100 AL details on page 96



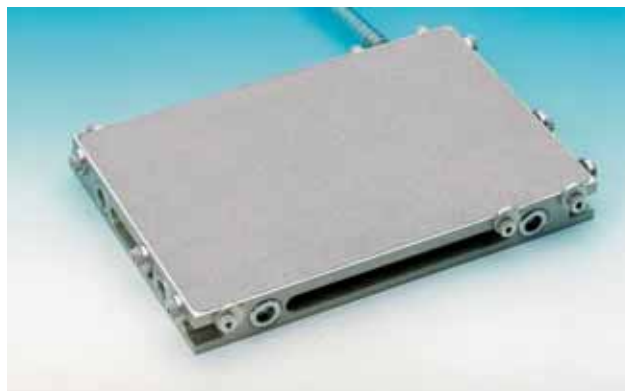
Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

μ-porous Vacuum chuck

with METAPOR® HD 210

| Nr. | A | B | C | |
|--------------|-----|-----|----|------|
| 94315 | 300 | 200 | 38 | 6,1 |
| 94316 | 400 | 300 | 38 | 12,2 |
| 94317 | 600 | 400 | 38 | 25 |

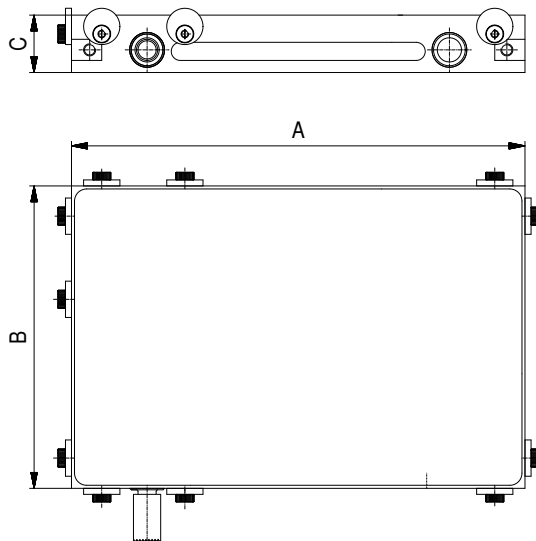
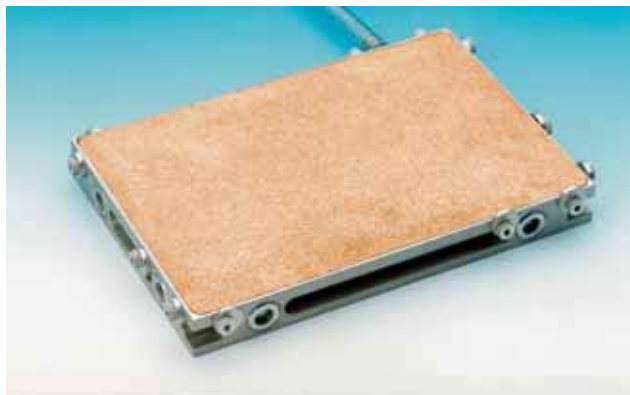


i Plate inlay in porous material Metapor HD210 AL for temperatures up to 210°C

Sintermetal Vacuum chuck

Double layered, hardwearing sinterbronze inlay

| Nr. | A | B | C | |
|-------|-----|-----|----|------|
| 84686 | 300 | 200 | 38 | 7,1 |
| 84687 | 400 | 300 | 38 | 14,2 |
| 84688 | 600 | 400 | 38 | 28,4 |



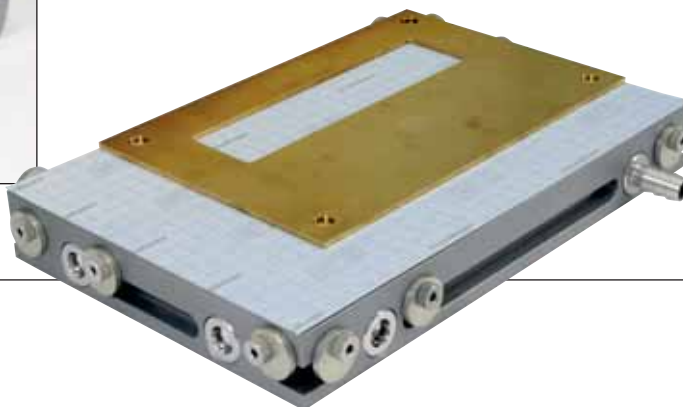
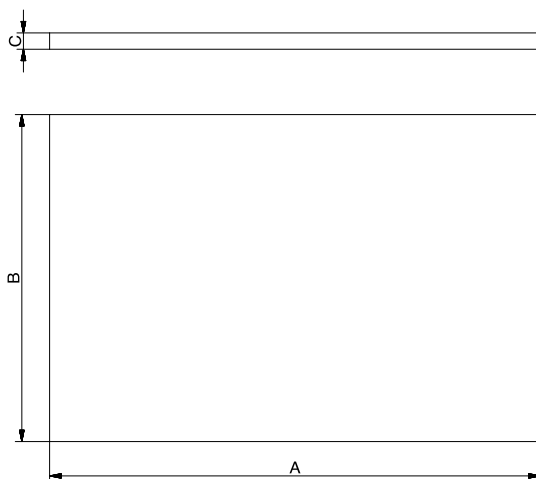
Supply includes:

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- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

Friction Booster

Protects Metapor chucks from damage when through cutting or lasering parts

| Nr. | A | B | C | Stck | kg |
|-------|-----|-----|----|------|-----|
| 00839 | 300 | 200 | <1 | 50 | 1,8 |
| 00840 | 400 | 300 | <1 | 25 | 1,8 |
| 00841 | 600 | 400 | <1 | 25 | 3,6 |



Vacuum Clamping Technology

for new technologies in research and development



Special version with integrated heating and electronic temperature control

1. Clamping with Witte vacuum chucks

Vacuum chucks from Witte have proven successful in many areas of semiconductor technology and made a name for accurate, fast and "gentle" clamping.

These lightweight, yet very accurate vacuum chucks are made of aluminum alloy and usually have a micro-porous clamping surface of Metapor material.

However, custom-built perforated-grid chucks with small holes arranged in a specific pattern can also be implemented. (See pictures)

2. Flexible

Besides standard versions of this vacuum chucks, Witte offers every conceivable specific design and dimension. We analyze technical requirements and environmental conditions of customers' processes, and develop a concept together with them. Various technically feasible configurations have already been manufactured.

3. Accurate

A modern machine shop and climatized measuring rooms with high precision measuring machines ensure excellent quality of products. Vacuum chucks are available **with flatness and / or parallelism of < 5μm** if the application profile of the customer requires it.

4. Reliability

A chuck surface comprising of micro-porous material guarantees completely "flat" clamping. Thin carrier foils or wafers are not deformed by suction holes, suction grooves or similar which occurs during conventional clamping methods. The low weight and accuracy of such Witte chucks is also advantageous for automated applications.

5. Universal

Another major advantage of micro-porous vacuum chucks is that the vacuum still works extremely effectively even when the micro-porous surface is not covered completely. This enables clamping of different sized parts on the same chuck. The porous surface may also be divided into separately operable areas with individual switches. (See example opposite) Integrated hovercraft technology, ejector and lifting pins are some of the technical ingredients of these innovative concepts.

Furthermore, vacuum chucks for certain processes can be **"heatable"** up to a temperature as high as 150°C with corresponding temperature controls (see picture above.).

Likewise, **cooling** systems or **light transparency** applications are possible.

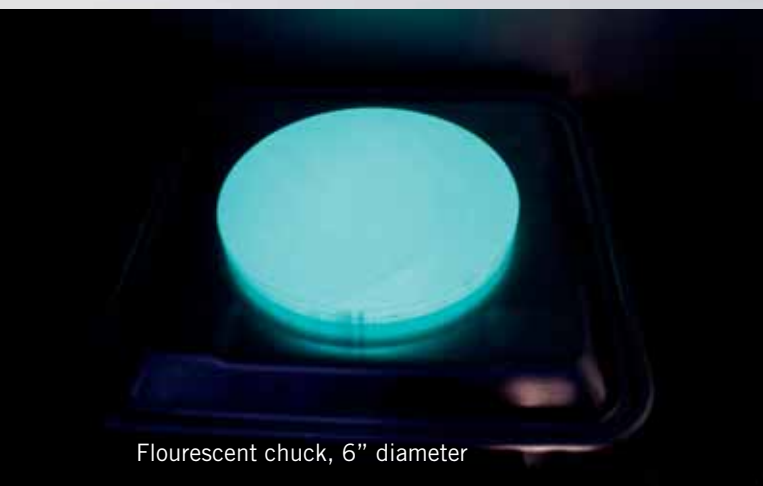
6. Everything from one source

In addition to standard and custom vacuum chucks Witte supplies all necessary accessories such as simple ejectors, vacuum pumps, rotary joints, hoses, solenoid valves and much more.

Our expert staff can advise you and look forward to your inquiry.



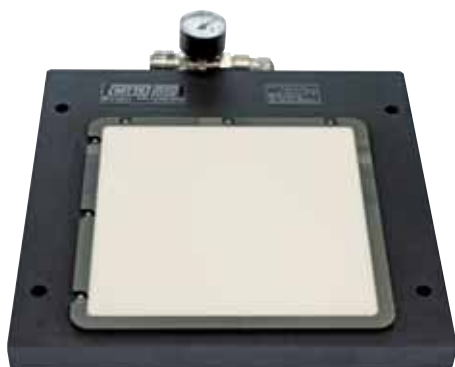
Specially designed porous chuck with three individual clamping areas, stops for part positioning and lifting pins for easy removal of wafers.



Flourescent chuck, 6" diameter

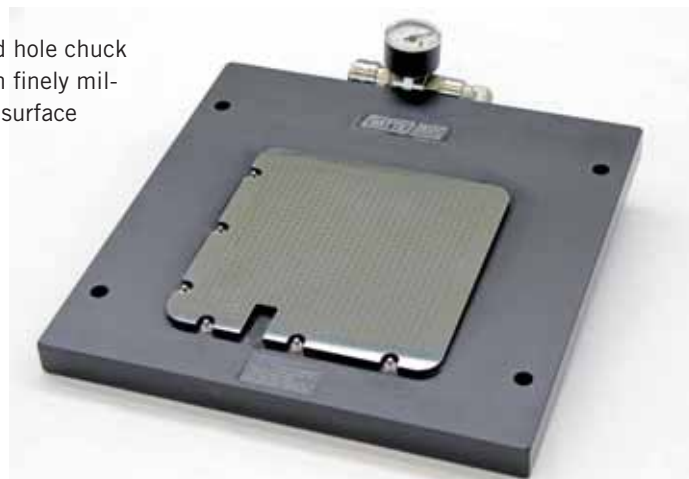


Independent vacuum chuck.
Clamping of parts on chuck completely free of external supply lines. Battery, vacuum pump, controls, display and valves are all integrated



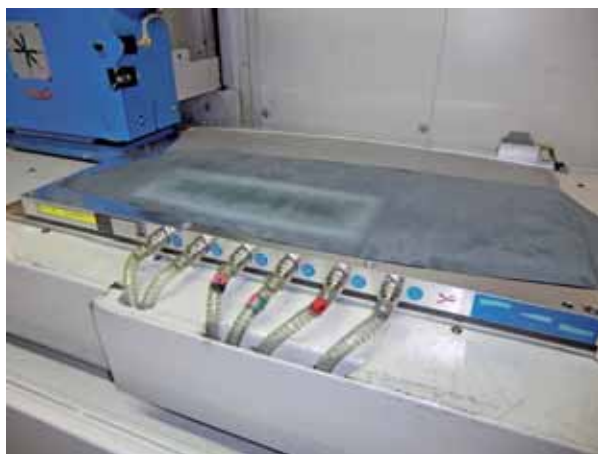
Finely milled vacuum chuck for clamping wafers, clamping area microporous material Witte MP CE100 WHITE flatness accuracy <0,005mm

Grid hole chuck with finely milled surface





DLC light transmitting chuck for clamping parts, views from above and below



Application in automotive industry, leather clamped on visible side for grinding predetermined breaking points in areas of airbags on reverse side

μ-porous vacuum chucks

Further examples



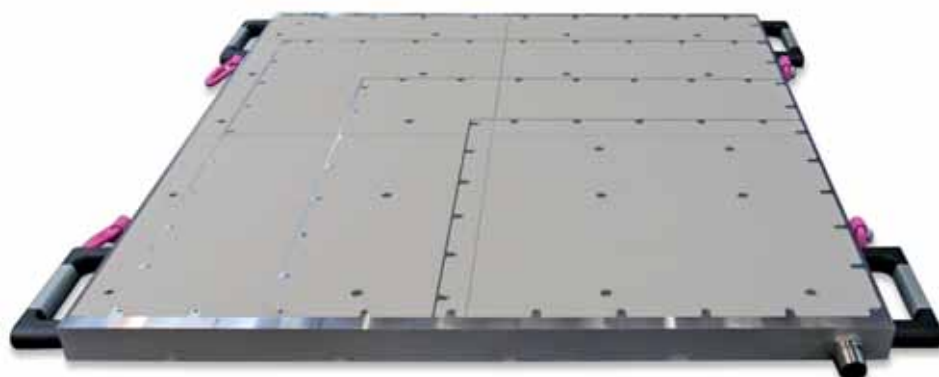
Same chuck shown without leather parts



Vacuum clamping system for laser application. Detail shows both clamping areas and cutting channels.

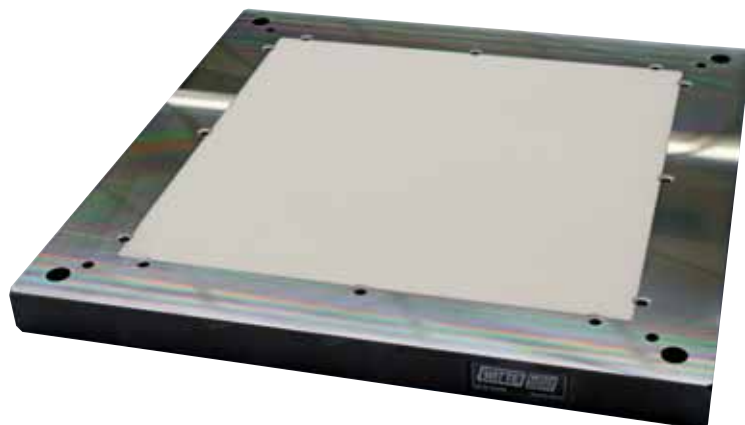


Small size micro finely machined chuck



Vacuum chuck with four separately usable clamping areas

Vacuum chuck with micro porous clamping surfaces and holes for applications using light transference





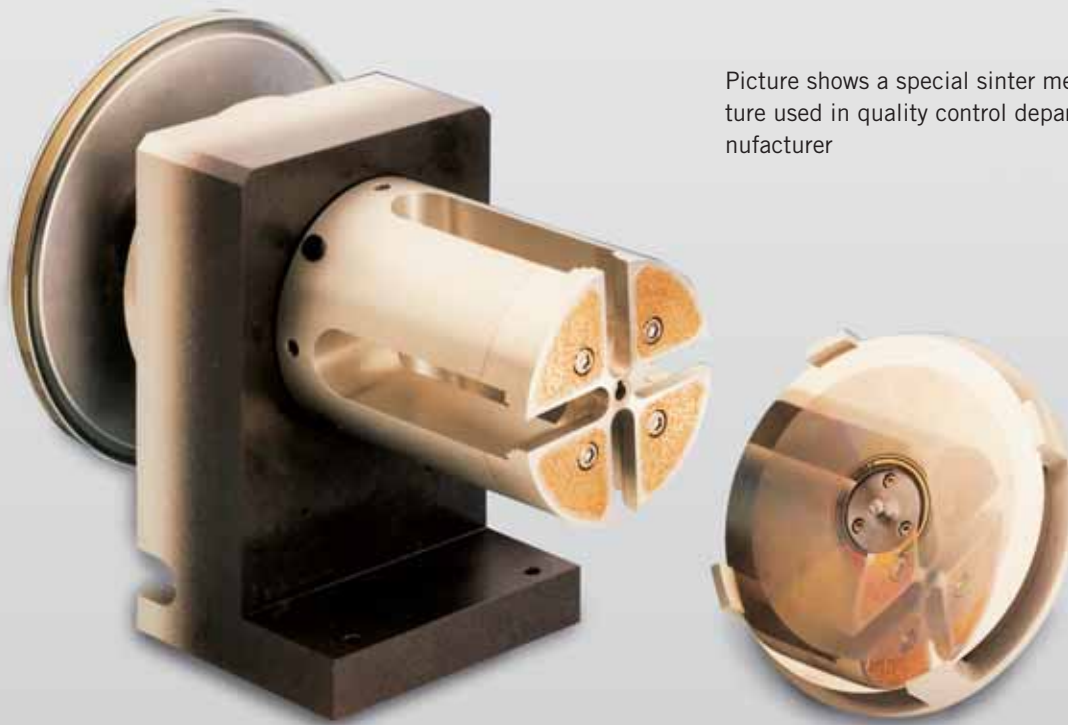
Vacuum chuck with two clamping areas and lifting pins for **automatic** controlled process



Vacuum chuck with three clamping areas and lifting pins for **manually** controlled process



DLC (Durchlicht chuck), light transmitting chuck for gentle clamping of parts during optical analysis process



Picture shows a special sinter metal vacuum fixture used in quality control department of CD manufacturer

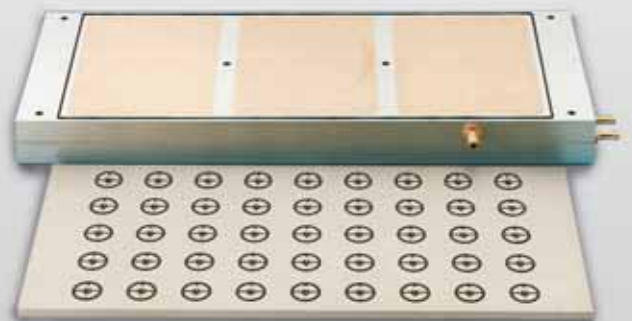
Sintermetal vacuum fixtures



3D Vacuum chuck



Vacuum chuck for credit cards



Sinter metal vacuum chuck with special adapter plate for clamping hard metal blanks during laser machining process.
It has an integrated cooling labyrinth which prevents inaccuracies, due to development of warmth which occurs during the laser machining process